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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,230	09/27/2001	Primož Lorencak	214155US0PCT	2058

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EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
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1755

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DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/926,230

Applicant(s)

LORENCIAK ET AL.

Examiner

Patricia L. Hailey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.                      6) ☐ Other: \_\_\_\_\_

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Applicants' Preliminary Amendment, filed on September 27, 2001, has been made of record and entered. With the entry of this amendment, claim 12 has been canceled, and new claim 13 has been added.

Claims 1-11 and 13 are now pending in this application.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 5-7, 11, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 5-7 lack antecedent basis for the phrase "anionic starch". Claim 1, from which these claims depend, does not recite this phrase.

Claims 11 and 13 are indefinite for their recitation of the phrase "obtainable by the process". Such a phrase implies that any of a variety of known process steps, conditions, and/or parameters can be implemented to obtain the "reaction products obtainable by the process of claim 1".

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international

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application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**4. Claims 1-4, 8-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Linhart et al. (U. S. Patent No. 5,851,300).**

Linhart et al. teach a process for cationically modifying starch by reacting starch with polymers which contain certain amino and/or ammonium groups in an aqueous medium at above the gelatinization (gelatinization) temperature of the starch, e.g., from 115° to 180°C. See col. 1, lines 7-12 of Linhart et al., as well as col. 3, lines 55-65.

Examples of the starch to be reacted include natural starches, as well as natural starches that have been pretreated, e.g., oxidatively, hydrolytically or enzymatically degraded, or chemically modified. See col. 2, line 66 to col. 3, line 10 of Linhart et al., as well as col. 8, lines 22-26.

Examples of the polymers to be reacted with the starch include homo- and copolymers containing vinylamine units (col. 3, line 17 to col. 4, line 28), unsaturated amides (col. 4, line 29 to col. 5, line 5), and compounds containing polymerized ethyleneimine units, including polyamidoamines which are grafted with ethyleneimine (col. 5, lines 12-31). These disclosures are considered to read upon the phrase "polymeric papermaking drainage aids", given that these polymers are among those recited in claim 1. Additionally, the claimed molar masses recited in claim 1 are considered to be inherently taught by Linhart et al. for this same reason.

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The aqueous medium may comprise an aqueous suspension of starch containing from 0.1 to 10 % by weight of starch (per 100 parts by weight water), and from 0.1 to 100 parts by weight of the cationic polymer(s) per 100 parts by weight starch. See col. 7, lines 31-45 of Linhart et al.

The process is performed at temperatures ranging between 115° and 180°C, and may be performed using a jet digester, for a residence time of from 0.1 second to 1 hour, preferably from 0.5 second to 30 minutes. See col. 7, line 63 to col. 8, line 9 of Linhart et al.

The modified starches are used as dry strength agents for paper, and can be used in the production of all known paper, board, cardboard qualities. See col. 8, lines 34-67 of Linhart et al.

In view of these teachings, Linhart et al. anticipate claims 1-4, 8-11, and 13.

5. Claims 1-11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Niessner et al. (U. S. Patent No. 6,160,050).

Niessner et al. also teach a process for modifying a starch with at least one cationic polymer. In the process, the cationic polymer(s) is added as an aqueous solution to starch (essentially in anhydrous form) under conditions including a temperature of from 10 to 130°C. See col. 3, line 4- to col. 4, line 10 of Niessner et al.

The modified starches are subjected to a digestion step, where the solid starch grains are converted into water-soluble form. In this step, aqueous suspensions or solutions of the cationically modified starches are heated to temperatures above the gelatinization temperature of the starches (e.g., about 60° to 180°C) in pressure-resistant apparatuses such as a jet digester, for a duration of about 0.1 to 15 minutes. See col. 4, line 49 to col. 5, line 17 of Niessner et al.

Examples of the cationic polymers include diallyldialkylammonium compounds (col. 6, line 11), unsaturated amides, and ethyleneimine-grafted polyamidoamines (col. 10, lines 6-8). See col. 5, line 37 to col. 12, line 12 of Niessner et al.

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Examples of the starches employed in the process include natural starches (e.g., corn, potato, wheat, tapioca), as well as hydrolytically or enzymatically degraded starches, oxidized starches, and chemically modified starches (e.g., starches esterified with inorganic or organic acids, phosphated and acetylated starches, and starches etherified with organic halogen compounds, epoxides, or sulfates). See col. 12, lines 12-40 of Niessner et al. This disclosure is considered to read upon the phrase "anionic starch" in claims 5-7.

The modified starches produced are used as dry and wet strength agents, drainage aids, and retention aids for paper, board, and cardboard. See col. 12, line 41 to col. 13, line 4 of Niessner et al. This disclosure is considered to read upon the limitations of claim 13.

In view of these teachings, Niessner et al. anticipate claims 1-11 and 13.

#### *Priority*

6. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### *Conclusion*

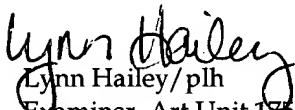
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (703) 308-3317. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (703) 308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.

  
Lynn Hailey/plh  
Examiner, Art Unit 1755  
March 19, 2003

  
Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700